

XXI.—On some undescribed *Phytophagous and Parasitic Hymenoptera from the Oriental Zoological Region.* By P. CAMERON.

FOR the species described in this paper I am indebted to Col. C. T. Bingham.

Tenthredinidæ.

Tenthredo lepcha, sp. n.

Luteous; the antennal scape in the middle above, the flagellum, the sixth to eighth and the sides of the ninth abdominal segment broadly laterally, and the hind legs, except the coxæ and trochanters, black. Wings yellowish hyaline, the apex from the end of the stigma fuscous, tinged with violaceous; the apex of the hinder with a narrower fuscous cloud. ♀.

Length 16 mm.

Sikkim.

Smooth, shining; the face, clypeus, labrum, mandibles, lower outer orbits, and base of legs pale yellow. The vertex in the centre with a short black pile, the face, clypeus, labrum, and base of mandibles sparsely covered with long pale hair; the thorax above thickly covered with short fuscous pubescence. Apex of clypeus broadly, roundly incised; the labrum punctured at the root of the hairs. Apex of mandibles black. Upper half of the front with a wide shallow depression, which is sparsely haired; the lower with a deeper, smooth, bare depression, the two parts being clearly separated; they are bordered by a broad keel. Centre of vertex (including the ocelli) bordered by a narrow, but distinct, furrow. Head large, wider than the thorax, the temples wide, rounded; occiput sharply margined. The third and fourth joints of the antennæ are almost of equal length; the antennæ are densely covered with short stiff black pubescence. Scutellum prominent, obliquely sloped at the base and apex.

This species comes close to *T. xanthoptera*, Cam.; the two may be separated thus:—

Hind femora, base of hind tibiæ, and apex of abdomen luteous; the third joint of antennæ distinctly longer than the fourth; the upper part of the frontal area roundly curved outwardly, the sides distinct, reaching to the outer ocelli, the apex of the lower part distinctly obliquely narrowed..... *xanthoptera*.

Hind legs, except the coxæ and trochanters, and the apical segments of the abdomen black; the third joint of the antennæ not distinctly longer than the fourth; the upper part of the frontal area not curved outwardly, the sides not distinctly keeled, not reaching to the hind ocelli, the lower part not distinctly obliquely narrowed..... *lepcha*.

Siobla rufo-balteata, sp. n.

Black, the head and mesonotum tinged with blue; the labrum, a line round the pronotum, narrowest in the middle, the anterior tibiæ in front and the outer side of the posterior, white; the second to sixth abdominal segments rufous. Wings hyaline to the first transverse cubital nervure, smoky violaceous beyond; the nervures and stigma black. Head, upper part of thorax, and legs densely covered with white pubescence, the antennæ thickly with stiff black pubescence. ♀.

Length 8 mm.

Yunzalin Valley, Upper Tenasserim; November (*C. T. Bingham*).

Front and vertex closely, finely punctured, shining; above each antenna is a wide, deep furrow, roundly dilated above and reaching halfway to the ocelli; in the middle below is a deep, slightly longer than wide, fovea; there is a wide, deep furrow between the ocelli in the middle. Scutellum minutely punctured. Cenchri large, white. The black on the apex of the abdomen has a violaceous tint; below it extends on to the sides of the sixth segment. Middle lobe of mesonotum furrowed, the furrow wide at the base, gradually narrowed towards the apex. The middle of the vertex is not bordered by furrows, the part behind the ocelli forming one piece. Temples narrow; occiput not quite transverse, being slightly curved inwardly. The clypeus is more strongly punctured than the rest of the head and becomes gradually narrowed to a point. The third joint of the antennæ is distinctly longer than the fourth; it is also thinner, becoming slightly dilated towards the apex; the apical four joints are thicker than the others, they become gradually narrowed towards the apex.

Selandria basilineata, sp. n.

Black, slightly tinged with blue; the clypeus, a narrow line on the edge of the pronotum, a broader one on the apex of the first abdominal segment, the apex of the middle coxæ

narrowly, of the hinder broadly, the apical joint of the middle trochanters slightly, the greater part of the posterior, the anterior tibiæ in front and the basal half of the four posterior above, white. Fore wings hyaline to near the stigma, the rest fuscous; the stigma, costa, and nervures black; the hind wings hyaline. ♂.

Length 9 mm.

Sikkim.

Antennæ stout, densely covered with black, stiff pubescence; tapering towards the apex, thickened towards the middle. Head slightly broader than the thorax; the temples broad, rounded behind; the front and vertex forming one piece; the ocellar region not bounded by furrows; there is a deep, small, clearly defined, semicircular fovea in the middle of the front below; on each side, above it, is a smaller, less distinct one, the three forming a triangle. Apex of clypeus broadly rounded; the pubescence on the front long, dense, pale. Upper part of thorax almost bare, the sides and breast bearing white pubescence. The second and following abdominal segments, at the apex, are narrowly, obscurely lined with white. The first transverse cubital nervure is faint in the middle.

Allied to *S. fuscinervis*, Cam., and *S. cæruleiceps*, Cam.; it may be known from both by the white clypeus and by the white band bordering the basal segment of the abdomen. It is a broader species than either.

Chalcididæ.

Oncochalcis marginiscutis, sp. n.

Black, densely covered with silvery pubescence, the apex of all the femora, the four anterior tibiæ, except the front pair (which are marked with black broadly in the centre behind) and the middle pair (which are similarly marked in front and behind), the hinder broadly at the base and apex behind (about one third), the tarsi and the tegulæ, bright lemon-yellow; wings hyaline, the nervures black. ♀.

Length 6 mm.

Haundraw Valley, Middle Tenasserim; August (*C. T. Bingham*).

Sides of front longitudinally reticulated; the vertex covered with round, interlacing punctures. Face irregularly rugosely punctured, with an aciculated space in the middle; the space wide in the middle, obliquely narrowed above and below. Clypeus punctured somewhat strongly in the middle.

Labrum large, aciculated, depressed in the middle, almost semicircular, the sides margined. Pro- and mesonotum and scutellum closely, somewhat strongly punctured; the base of pronotum slightly projecting in the middle, the sides broadly curved. Apex of scutellum broadly rounded, with a raised margin, behind which is a crenulated furrow. Metanotum coarsely reticulated, the areola longer than wide, the apical half abruptly widened, its apex almost transverse. In the centre of the propleuræ is a semicircular closely striated space, projecting into the punctured upper part, the sides irregularly marked with stout keels; at the bottom are two irregular depressions. On the lower part of the smooth, flat base of the metapleuræ are three irregular, but distinct foveæ, one below the other, the upper longer than wide, ovoid, the lower two wider than long; the part below them coarsely, rugosely punctured, more or less reticulated; the middle stoutly striated, the striæ distinctly separated and becoming weaker below; the apex projects and bears weak indications of striæ. Metapleuræ closely, rugosely reticulated. Basal three segments of abdomen bare, shining; the fourth and fifth are punctured and covered with white pubescence at the apex; the sixth is large, strongly punctured and covered with white pubescence. There are twelve teeth on the hind femora, the apical stronger than the basal; the apex of the hind tibiæ has a distinct projection, which is curved and becomes gradually narrowed.

Evaniidæ.

Evania Binghami, sp. n.

Black, the antennal scape and the basal three joints of the flagellum, mandibles, the fore legs, the middle except the tarsi and the hind trochanters and femora, red; the head and thorax closely covered with white hair, the thorax also more densely with white pubescence; the legs thickly with longer hair, which is white on the coxæ and trochanters, fuscous on the rest. Wings hyaline, clouded in the discoidal cellule; the costa, stigma, and nervures black, the apical nervures pale. ♀.

Length 7 mm.

Haundraw Valley, Middle Tenasserim; August (*C. T. Bingham*).

Face strongly striated, the striæ clearly separated, converging towards the centre below and with a stouter central longitudinal keel. Sides of front strongly striated, the wider

central part smooth, with a stout keel down the middle; the malar space strongly, obliquely striated and with some punctures. Eyes prominent, very slightly converging above, separated from the mandibles by their own length. Temples short, oblique; the occiput margined, transverse. Base of thorax transverse, the sides of pronotum oblique. Pro- and mesonotum coarsely, rugosely punctured; the apex of the latter with widely separated keels enclosing depressions. Scutellum stoutly reticulated-punctured. Median segment with large, round, deep reticulations; the apical slope depressed in the middle at the apex, thickly covered with white pubescence. Propleuræ with longitudinal keels, with a large fovea between them at the apex; the meso- and metapleuræ closely reticulated, the upper basal half of the former smooth, bare, and shining, and having the top bordered by an area with four stout keels, of which the anterior pair are closer to each other and converge below. Metasternal process stout, the basal part long, broad, the apical forks roundly diverging. Abdomen shining, the petiole irregularly striated at the base, the middle with deep punctures. Hind coxæ, except at the enlarged base, stoutly punctured; the trochanters and femora with scattered punctures; the tibiæ more strongly, closely, rugosely punctured, their calcaria rufo-fulvous, the long spur not reaching to the middle, more than one third of the length of the metatarsus; the tarsal joints with rufous spines at the apex; the metatarsus sparsely spinose. The transverse median nervure is interstitial. The antennæ are shorter and thicker than usual, especially beyond the middle of the flagellum. The ocelli are almost in a line, the anterior hardly projecting beyond the posterior; these are separated from each other by a distinctly greater distance than they are from the eyes.

The legs and antennæ are shorter and stouter than usual.

Braconidæ.

Iphiaulax domdamiensis, sp. n.

Luteous, the antennæ and ocellar region black. Wings yellowish hyaline to the parastigma, the yellow forming a triangular cloud in the lower basal part of the first discoidal cellule; the first cubital cellule for the greater part hyaline, slightly tinged with yellow; the basal two thirds of the hind wings yellowish hyaline. Basal four segments of abdomen as long as the head and thorax united, hardly wider than the thorax, smooth, except the second segment, which is strongly

striated to the lateral depressions, and the third, which is finely closely striated to the beginning of the lateral furrows, the striæ extending to near the middle. There is a distinct keel down the middle of the second segment, with a small, smooth, triangular plate at the base. Suturiform articulation closely crenulated, the apical lateral branch smooth; there is a smooth curved furrow at the base of the fourth segment in the middle; there are no lateral apical furrows. The hind tarsi are black from near the middle of the basal joint. Temples broad, rounded, slightly narrowed; the occiput transverse. The ocellar black spot is rounded behind; in front it is gradually narrowed and reaches close to the antennæ; there is a distinct furrow down the front. Ocelli brown, the anterior lighter coloured than the posterior. ♀.

Length 13, terebra 9 mm.

Domdami Valley, Middle Tenasserim; September (*C. T. Bingham*).

The apex of metanotum and the second and third abdominal segments are suffused with fuscous. Face smooth, with sparse black longish hairs. Tips of mandibles black. Second cubital cellule about two and a quarter times longer than wide; the recurrent nervure is received shortly behind the cubital.

Iphiaulax haundrawensis, sp. n.

Luteous; occiput, vertex, upper half of front, a line leading from this black part to each antenna, antennæ, three broad lines on the mesonotum (the central shorter and broader than the lateral, which extend from near the base to the scutellum), the third and following segments of the abdomen and large spots on the ventral, the apical two thirds of the hind tibiæ, their calcaria, and the tarsi, black. Wings yellowish hyaline to near the base of the stigma, the yellow extending beyond the lower part of the transverse basal and the transverse median nervure and the basal half of the hind wings; the rest fuscous, except the usual hyaline spots below the stigma; the costa, except at the apex, and the stigma to shortly beyond the middle, pale luteous. ♀.

Length 11, terebra 3 mm.

Haundraw Valley, Middle Tenasserim; August (*C. T. Bingham*).

Abdomen as long as the head and thorax united and broader than them; longish oval; the first segment stoutly keeled in the middle, the sides with a few irregular stout

striæ; the second segment clearly wider than long, its centre stoutly longitudinally striated, without a smooth basal area and keel; the suturiform articulation irregularly striated, the sides smooth and triangularly dilated; there is a distinct crenulated furrow on the base of the fourth and fifth segments and a smooth one on their apices; the pubescence on the basal two segments is pale fulvous, on the others black, on the apical dense; the apices of the sixth and seventh have a narrow pale border. Wings ample; the recurrent nervure is interstitial; the second cubital cellule is three times longer than wide.

Iphiaulax stramineus, sp. n.

Pale yellow, the lobes of the mesonotum broadly pale brown; the antennæ, centre of front broadly, the vertex broadly in front, entirely behind to near the middle of the outer orbits, and the occiput, black; the face and orbits pale yellow. Wings yellowish hyaline to the lower part of the transverse basal nervure; beyond fuscous violaceous, with the usual hyaline spots below the base of stigma; the fuscous cloud in the hind wings is broadest behind; the stigma is yellow to the commencement of the radius. The middle of the first abdominal segment, the second entirely, and the basal two thirds of the third are closely longitudinally striated; there is no area on the base of the second segment, it being there striated like the rest of the segment. ♀.

Length 13, terebra 4 mm.

Haundraw Valley, Middle Tenasserim; August.

Abdomen elongate-oval, the basal three segments as long as the thorax; suturiform articulation wide, deep, crenulated; there is a narrower but distinct crenulated furrow on the base of the fourth; there are no apical furrows. Metanotum thickly covered with longish white pubescence. The second cubital cellule fully three times longer than wide.

This species is related to *I. spilocephalus*, Cam., but is much paler in colour, the abdomen longer and narrower, and the second cubital cellule much longer.

Iphiaulax burmaensis, sp. n.

Rufo-luteous, the flagellum of antennæ black. The wings yellowish hyaline, the apex with a narrow pale fuscous border; the base of first cubital cellule with a small black square cloud, reaching to the base of the stigma; the costa, stigma, and nervures bright luteous. The raised middle of

first abdominal segment closely, strongly, longitudinally striated, with a distinct keel down the centre; the basal two thirds of the second closely, somewhat strongly, irregularly, more or less obliquely striated, and without a basal defined area. ♀.

Length 17, terebra 9 mm.

Shwegyin, Lower Burma; November (*C. T. Bingham*).

This species is remarkable for the asymmetry of the furrows on the second abdominal segment; they are not placed opposite each other, that on the left side, looking from the head, being near the middle and straight, oblique; the other is near the apex and is roundly curved, the part beyond it is closely striated, that on the opposite side to it at the apex is smooth; beyond it is a narrow, deep, closely striated furrow, from which the following segments become gradually narrowed. Parapsidal furrows indicated on basal slope only; the apex of mesonotum flat. Temples roundly narrowed; the occiput slightly roundly incised. Face sparsely punctured laterally, each puncture with a longish black hair. Pubescence moderately dense, fulvous. Wings longer than the body, the second cubital cellule as long as the third, the transverse median nervure not quite interstitial, the recurrent nervure received near the apex of the first cubital cellule.

Iphiaulax lineaticarinatus, sp. n.

Luteous, the flagellum of antennæ black. The wings yellowish hyaline, the costa, stigma, and nervures luteous; the parastigma and apex of stigma black; a black cloud at the base of the stigma, oblique, slightly narrowed in front, extending to the recurrent nervure, which it covers; a broad lighter-coloured band on the apex, commencing near the base of the radial and second cubital cellules, broader and deeper tinted behind; there is a similar apical cloud in the hind wings. Smooth, shining; a distinct narrow keel of equal width down the middle of the first and second segments and a less distinct one down the third; there is a broad depression down the sides of the second segment, curved, narrowed and oblique on the inner side of the base; there is a distinctly defined smooth furrow on the basal half of the third; the suturiform articulation wide, crenulated. Temples wide, obliquely narrowed; the occiput rounded inwardly, the sides broadly rounded. Face covered with long black hair. Clypeus clearly separated, forming a distinct semicircle. First abdominal segment twice longer than it is wide at the

apex, the second longer than wide, the others wider than long; the transverse median nervure not quite interstitial. ♂.

Length 15 mm.

Sikkim.

This species is closely related to *I. bhutanensis*, Cam.; that may be known, *inter alia*, by the absence of a middle keel on the third segment, by the much weaker keel on the first, and by the keel on the second being triangularly dilated at the base.

Also to *I. pauperatus*, Cam.; that has the keel on the second abdominal segment dilated at the base, and it does not reach to the apex of the segment; the space on either side of it is obliquely striated, not perfectly smooth as in the present species.

Iphiaulax sikkimensis, sp. n.

Luteous, the abdomen darker coloured, the antennæ black. The wings yellowish hyaline to near the top of the transverse basal nervure, dark fuscous beyond, the base of the discoidal cellules being yellowish; the basal half of the stigma yellow; the area on base of second abdominal segment narrow, longish, gradually narrowed, running into the keel, stoutly longitudinally striated. Abdomen longish oval, broader than the thorax; the basal three segments stoutly longitudinally striated, the striæ strongest on the first. Temples broad, roundly narrowed, the occiput transverse. ♀.

Length 12, terebra 4 mm.

Sikkim.

Face sparsely punctured, covered with long bright fulvous hair. Front and vertex smooth, sparsely haired. Basal half of mandibles luteous, the apical black. The depression on the base of the second segment is closely obliquely striated; the striæ on the middle of the segment are strong and intertwine. The basal two abscissæ united are as long as the third; the second cubital cellule is fully three times longer than wide along the cubitus.

Comes near to *I. spilopterus*, Cam.

Iphiaulax Hookeri, sp. n.

Luteous, the head paler, more yellowish in tint; a large broad mark on the front, extending backwards to shortly behind the ocelli, where it is narrowed and rounded; the third and following segments of the abdomen, the hind tibiæ from near the base, the hind tarsi, the hind spurs, and the antennæ black. Wings yellowish hyaline to the top of the

transverse basal nervure, blackish fuscous beyond; the stigma black. Abdomen smooth; the apex of first segment finely striated in the middle, the second much more strongly and irregularly striated; the keel large, the basal half roundly narrowed, smooth, the apex gradually narrowed to a point, followed by a keel nearly as long as the dilated basal part, and which does not quite reach to the apex of the segment; it is bordered in the middle by five or six stout oblique striæ, the parts surrounding the base and apex being smooth. Sutureform articulation deep, closely stoutly crenulated; there is a curved lateral branch, which is not quite so strongly crenulated; the sides of the segment irregularly roughened. ♀.

Length of body and ovipositor 13 mm.

Sikkim.

Head large, cubital; the temples longer than the eyes, slightly rounded, not narrowed; the occiput transverse. Face distinctly sparsely punctured; the clypens is separated from it by a distinct curved furrow, laterally by a depression in which is a round distinct fovea. Mandibles black, except at the base. Palpi testaceous, covered with white hair. Antennal scape slightly more than twice longer than wide, slightly dilated at the apex below. Recurrent nervure interstitial. First abdominal segment clearly longer than the second, about one fourth longer than it is wide at the apex. Malar space about one fourth shorter than the length of the eyes.

Iphiaulax Campbellei, sp. n.

Black; the head, the prothorax, the mesonotum laterally at the base, a line bordering the middle lobe, the centre broadly from behind the middle to the apex, and a large oblique mark below the fore wings testaceous; a mark bordering the sides of the scutellum and a broad line on the lower part of the mesopleuræ rufous; the first abdominal segment, except for a mark, longer than broad, in the centre at the apex and the ventral surface, pale testaceous. Legs black; the anterior apical joint of middle trochanters, the apical half of middle femora, a streak in their middle above, and the base of middle tibiæ testaceous. Wings almost hyaline; the stigma black, testaceous in front and at the base behind, the costa and nervures black; the recurrent nervure received shortly before the first transverse cubital. ♀.

Length 8, terebra 3 mm.

Sikkim.

Abdomen longish ovate, in the middle clearly wider than the thorax, which is equal to it in length; its first segment a little longer than it is wide at the apex; the central part gradually roundly narrowed from the apex to the base, longer than wide; the apical half with a central keel, widest at the base; from it stout striæ radiate towards the apex. The central part of the second segment is irregularly longitudinally reticulated-striated, the sides finely rugose, intermixed with striæ and punctures; the suturiform articulation deep, closely crenulated, without an apical lateral branch; the other segments opaque, alutaceous. The sixth and apical segments are whitish testaceous. Antennal scape fully three times longer than wide. The base of the cubitus is straight and runs parallel with the costa before curving down towards the first transverse cubital nervure.

Iphiaulax? tenasserimensis, sp. n.

Luteous, the flagellum of the antennæ black. The wings yellowish hyaline, the nervures and stigma luteous; the apex of the fore wing from the radius with a narrow smoky border, the hind wings with the apical third smoky; there is a square blackish cloud between the transverse basal nervure and the base of the stigma, the costa at its apex being also black. The first abdominal segment, except the basal slope, the second entirely, and the third to near the middle, closely, finely, longitudinally striated. ♀.

Length 13, terebra 7 mm.

Domdami Valley, Middle Tenasserim; October (*Bingham*).

Smooth, except on the basal abdominal segments, densely covered with fulvous pubescence, except on the face, where it is long, sparse, and blackish. Abdomen nearly twice the length of the thorax, not dilated in the middle, as wide as the thorax; the suturiform articulation wide, deep, striated; the other furrows narrow, smooth, indistinct. The third abscissa of radius is nearly as long as the basal two united. Temples broad, roundly narrowed; the occiput transverse. Mesonotum flat behind, the furrows distinct in front. There is no depression on the sides of the second segment; there is a short, broad, curved furrow on the sides of the third.

Ichneumonidæ.

TRYPHONINÆ.

Cultrarius purpureotinctus, sp. n.

Black, the apical three segments of the abdomen purple; the edges of the facial shield (the top more narrowly), the

upper eye-orbits below, and the underside of the antennal scape yellow; the flagellum of antennæ brownish below; the underside of the four anterior tibiæ and tarsi, the hind femora, a mark on the sides of the first abdominal segment, a broader continuous band on the apices of the second and third, and one on the lateral fourth of the fourth dark red; the genital armature large, rufo-testaceous. Wings hyaline, very iridescent, the radial cellule and the apical half of the third cellule smoky. ♂.

Length 14 mm.

Takvar, Darjiling, 4000 feet; April (*C. T. Bingham*).

Head somewhat strongly but not very closely punctured; the lower part of the face, outside the shield, and the clypeus fully more strongly and more closely punctured; the occiput and temples smooth, densely covered with white pubescence. Pro- and mesothorax strongly closely punctured, the pleuræ more strongly than the top; the scutellum still more strongly punctured, its basal depression wide, deep, with five stout keels; the end of the apical slope striated. Postscutellum densely covered with long white hair. Areola 6-angled, clearly longer than it is wide at the base, the apical half narrowed, the apex half the width of the base: it has a raised smooth line in the centre; the rest irregularly wrinkled; there is a large lateral area, wider than long, its apex broadly rounded, the centre with some large punctures, the apex with a few striæ, the apical slope closely rugosely punctured. Metapleuræ more strongly punctured than the rest, the punctures larger and more widely separated than on the mesopleuræ. Abdomen closely strongly punctured; the first segment raised in the middle, the raised part bordered by keels, which are higher and rounded at the base and depressed in the middle; the second and fifth segments are indistinctly keeled in the middle, the third and fourth have a more distinctly defined central keel which projects on the apex of the third; the apical two segments are densely covered with short black hair. Mesopleural furrow wide, deep. Areolet large, the nervures not uniting in front; the recurrent nervure received in the middle. Scutellum uniformly punctured; the lateral teeth large, triangular. Fore calcaria testaceous, the others white.

Cultrarius areolatus, sp. n.

Length 10 mm. ♂.

Sikkim.

This species resembles closely *C. purpureotinctus* in coloration. *Ann. & Mag. N. Hist.* Ser. 7. Vol. xix.

tion; the differences between them may be expressed thus:—

- Areola clearly longer than wide, 6-angled, the apical half obliquely narrowed, the apex transverse, the lateral area strongly punctured; scutellum without a deep furrow in the middle; the keels on the centre of the first abdominal segment not uniting at the apex, straight; areolet not appendiculated; the hind femora rufous *purpureotinctus*.
- Areola as long as wide, not angled, its apex broadly rounded, the lateral area smooth; scutellum with a deep furrow in the middle; the keels on first abdominal segment roundly curved and uniting at the apex; the areolet shortly appendiculated; the hind femora black *areolatus*.

The coloration is the same otherwise, except that the purple tint on the abdomen commences on the second segment, that the scutellar keels are yellow, and that the lines on the second to fifth abdominal segments are narrower, of more uniform thickness, and more yellowish in colour. The puncturation is pretty much the same; on the second segment of the abdomen it is stronger and more irregular, that segment, too, being shorter compared with the width; the keels on the second to fourth segments are narrow, but distinct. The calcaria are all whitish. The abdomen is shorter, too, compared with the thorax.

OPHIONINÆ.

Eniscospilus xanthocephalus, sp. n.

Luteous; the head pale yellow. The wings hyaline, the nervures black, the stigma testaceous: there are two horny points, the basal large, broad and transverse at the base; the base above narrow, transverse; from there it becomes gradually roundly narrowed to a fine point at the apex; the second point is close to the middle of the basal abscissa of the radius; it is longish, narrow, roundly curved towards the radius. Scutellum distinctly keeled laterally from the base to the apex; the basal half smooth, the apical finely, closely, longitudinally striated. Base of metanotum smooth; the depression with some stout striæ; the rest is stoutly striated, the striæ clearly separated; in the centre of the base is a short straight stria; the striæ at the sides of this are longitudinal and straight at the base, then curving out obliquely to the sides; the striæ on the apical slope are roundly curved from side to side. The centre of propleuræ finely obliquely striated; the lower half of the mesopleuræ longitudinally

striated, the striæ weaker above and all clearly separated. Base of radius broadly curved downwards; the discocubital nervure broadly roundly curved, but not much, at the apex, its apex widely distant from the commencement of the apical abscissa of the radius. ♀.

May be known from *E. reticulatus*, Cam., and *E. striatus*, Cam., from the Khasias, by the wings having two horny points in addition to the other differences.

Length 27 mm.

Hamdraw Valley, Middle Tenasserim; August (*C. T. Bingham*).

CRYPTINÆ.

Melcha ornatipennis, sp. n.

Black; the scutellum, median segment entirely, the apex of mesopleuræ, base of first abdominal segment to shortly beyond the middle, all the femora, and the four hinder coxæ red; the four anterior tibiæ and the fore tarsi of a paler red, the middle tarsi fuscous, the anterior coxæ and trochanters black; the hind tibiæ and the basal and apical joints of the tarsi black, the middle joints white; the basal half of pronotum, apex of postpetiole broadly, the apex of the second segment slightly more narrowly and more irregularly, the apex of the sixth and the apical entirely, white. Wings hyaline, a cloud in the fore wings extending from the base of the stigma to the areolet and the recurrent nervure; the stigma and nervures black. ♂.

Length 9 mm.

Salween Valley, Middle Tenasserim; July (*C. T. Bingham*).

Thorax and head thickly covered with white pubescence. Base of metanotum smooth; there are two short keels in the middle at the transverse keel; the rest of the metanotum rather strongly reticulated, almost smooth in the middle at the base; the metapleuræ strongly but more closely reticulated. Propleuræ at the apex from shortly above the middle covered with close, stout, curved, longitudinal striæ. Areolet not quite square, being slightly longer along the radius than along the transverse cubital nervures; it is of equal width.

Allied to *M. maculipennis*, Cam., from Borneo; that species has the femora black and the scutellum white.

Silsila spilonota, sp. n.

Black; the face, clypeus, a line on the inner orbits, one on the lower third of the outer, the malar space, mandibles

(except the teeth), palpi, the dilated base of the pronotum, tegulae, an elongated conical mark at the apex of the middle lobe of the mesonotum, the broad end at the base and transverse, scutellums, scutellar keels, a large curved mark behind the hind wings, the apical slope of the metanotum (the mark continued backwards in the middle, this line becoming gradually narrowed), the apex in the centre with a black line, the lower edge of the propleurae, the line narrowed in front, tubercles, a large mark on the lower part of the mesopleurae, the top broadly incised, the apex above smaller than the base, a curved mark at the apical half of the sternal furrow, a large elongated conical mark on the metapleurae and broad bands on the apices of the abdominal segments, yellow. Four front legs pale yellow, infuscated above; hind coxae black, broadly yellow in the middle above, the trochanters black; the femora fulvous, their base narrowly and the apex from near the middle black; the tibiae yellow, tinged with fulvous, the base narrowly and the apical fourth black; the tarsi white, the apex of last joint black. Wings hyaline, the stigma and nervures black. Antennae broadly ringed with white. ♂.

Length 13-14 mm.

Haundraw Valley, Middle Tenasserim (*C. T. Bingham*).

Face strongly but not closely punctured; the clypeus with a few punctures above. Front and vertex smooth, a short keel and a few striae on the front below. Mesonotum smooth, the inner half of the outer lobe irregularly reticulated at the apex. The space at the sides of the scutellums irregularly stoutly striated. Basal depression of metanotum stoutly crenulated; the base at the sides stoutly irregularly punctured; the rest stoutly transversely reticulated. Pro- and mesopleurae stoutly longitudinally striated, the striae roundly curved, the lower part of the latter strongly punctured. Metapleurae strongly punctured above, the punctures distinctly separated, the puncturation below coarser, the punctures running into reticulations. Pro- and mesonotum sparsely haired, the metanotum much more densely pilose and with the hair longer.

May be known from the two described Himalayan species of *Silsila* (*fulvipes*, Cam., and *bilineata*, Cam.) by the large conical mark on the mesonotum.

Buodias rugifrons, sp. n.

Black; the face, clypeus, basal half of mandibles, palpi, a line on the upper inner orbits and on the lower half of the

outer, a line on the base of propleuræ extending broadly on to the pronotum, a line on the sides of pronotum, a small conical spot on the apex of the middle lobe of pronotum, scutellum, base of metanotum (the lines narrowed on the inner, dilated on the outer side), a square mark in the centre behind the keel (the middle part narrowed at the base, the line becoming gradually dilated to a triangle), the apical slope, a spot below the hind wings, and the apical three fourths of the metapleuræ, the apex of the second abdominal segment, the apical and the ventral segments, pale yellow. Four front legs pale yellow, the femora slightly tinged with fulvous; the hind legs rufo-fulvous; the trochanters, apical half of femora, and the tibiæ from near the middle black; the tarsi white, narrowly black at the base. Antennæ broadly ringed with white. Wings hyaline, the nervures and stigma black. ♂.

Length 10 mm.

Sikkim.

Face closely and strongly punctured, the clypeus smooth. Front closely rugosely reticulated, keeled down the middle, the lower part with a smooth transverse line, clearly separating the rough part; vertex closely punctured. Mesonotum closely distinctly punctured, except at the sides; the scutellum smooth. Base of metanotum with scattered punctures; inside the spiracles is a keel reaching from the base to the apex; there is a keel on the apical half of the white central mark; the rest is stoutly longitudinally reticulated, mixed with some punctures; the lateral teeth are small. Areolet of almost equal width, longer along the radius than along the transverse cubital nervures, the recurrent nervure received near the middle.

This species is smaller than the others; the areolet is larger and the metanotal spines smaller than usual.

Cryptus Binghami, sp. n.

Black; a narrow line on the inner orbits, a similar one on the lower two thirds of the outer, and the tubercles yellowish testaceous; the legs red; the coxæ, trochanters, and the underside of the four anterior femora to shortly beyond the middle, and a short line on the apex of posterior femora, black; the apical joints of the four anterior tarsi infuscated, joints 2-4 of the posterior yellow. Wings hyaline, the nervures and stigma black. ♀.

Length 13, terebra 4 mm.

Darjeeling, 5000 feet (*C. T. Bingham*).

Postscutellum smooth, the sides aciculated-striated. Propleuræ rugose above, the rest stoutly obliquely striated, the striæ intermixing more or less; the meso- and meta-pleuræ closely coarsely reticulated-punctured. Tibiæ sparsely, the tarsi closely spinose. Palpi and mandibles black, the former covered with white pubescence. Head, thorax, and legs densely covered with white pubescence. The front is deeply depressed from the eyes and is strongly, closely, transversely striated.

This species is not unlike *C. luculentus*, Cam.; the two may be separated thus:—

| | |
|---|--------------------------|
| Apical keel on metanotum interrupted in the middle; four anterior femora not lined with black; the three middle joints of hind tarsi not yellow | <i>luculentus</i> , Cam. |
| Apical keel on metanotum complete; the four anterior femora broadly lined with black; the three middle joints of hind tarsi yellow | <i>Binghami</i> . |

C. Binghami is a more slenderly built species than *luculentus*; the front is more deeply depressed and is more distinctly transversely striated; the scutellum is more prominent and has the sculpture rougher and more irregular.

The male of *Binghami* has the inner orbits more broadly yellow than in the female; it differs further in the face having in the middle of the top above a yellow mark, longer than wide and narrowly projecting at the sides above; the clypeus and mandibles are for the greater part yellow, as are also the greater part of the anterior coxæ and trochanters; the middle coxæ and trochanters are yellow on the outer side.

C. luculentus has been taken by Col. Bingham at Darjiling, 7000 feet, in March.

ICHNEUMONINÆ.

ICHNEUMONINI.

LAGARISTA, gen. nov.

Scutellum not much raised, quadrate, stoutly keeled laterally to the top of the apical slope. Metanotum regularly areolated; the areola about two and a half times longer than wide, rounded and slightly narrowed at the base, rounded inwardly at the apex; the lateral basal areæ confluent, the petiolar area absent. Antennæ distinctly dilated towards the apex. Apex of clypeus broad, transverse. Apical tooth of mandibles long, narrowed gradually towards the apex; the subapical tooth short, turned inwardly. Base of petiole broader at the base than it is thick dorso-ventrally—broader

than in *Ichnemon*, but not so broad as in *Platylabis*. There are seven abdominal segments; the last broad at the apex, two thirds of the length of the penultimate; the ventral fold extends to the apex of the fourth segment. Arcolet 5-angled; the discocubital nervure unbroken; the transverse median nervure interstitial. Tarsi closely spinose. The ovipositor is long, distinctly projecting, as long as the apical two segments united.

The head is as wide as the thorax; it is large, but not behind, the temples being short, the occiput rounded inwardly, the cheeks sharply margined. Labrum hidden. The antennæ are longer than the body, slender, except at the dilated apical part; the basal joints of the flagellum elongate, the first slightly longer than the second. Postpetiole striate.

The systematic position of this genus is not clear. The form of the metanotum is as in the *Ichnemonini*, and it cannot therefore be referred to the *Joppini*. For the present I refer it to the former tribe. It is clearly related to the Ceylonese *Aluina*, Cam.; that genus may be known by the areola being much wider compared with the length, by the much wider temples, and by the discocubital nervure being broken by a stump. The form of the metanotal areola separates the Ceylonese *Deniya* from it; that genus may be further known by the almost obsolete temples, transverse occiput, and by the apex of the clypeus being rounded.

Lagarista maculiscutis, sp. n.

Black; the head except the centre of the vertex (covering the ocelli), the front, and the occiput except the outer edges, a line on the top and bottom of prothorax, two narrow longitudinal lines in the middle of the mesonotum, scutellar keels, scutellum except for a conspicuous black conical mark in the centre, postscutellum, an irregular mark in the centre of the lateral basal area of the metanotum, the apical lateral areas, the yellow extending slightly below them, the greater part of the lower half of the mesopleuræ, a large spot behind the hind wings, the metapleuræ from behind the middle, and the apices of the abdominal segments (the lines on the basal three broad and dilated laterally—that on the fifth narrow and interrupted in the middle, that on the sixth in the centre only, and the last entirely), pale yellow. Legs fulvous; the four anterior coxæ and trochanters pale yellow, the hinder femora more reddish in tint; the hind coxæ yellow, fulvous on the outer side and blackish at the apex above; the apex of the hind femora, of the hind tibiæ more broadly, and of the

basal half of the metatarsus black; the hind tarsi white. Wings hyaline, the stigma testaceous, the nervures blackish. Flagellum of antennæ broadly ringed with white. ♀.

Length 11 mm.

Sikkim.

Face distinctly but not closely punctured, the clypeus with a few scattered punctures above; front below the ocelli finely closely striated. Mesonotum closely, regularly, somewhat strongly punctured; the scutellum with a few large punctures in the centre. Posterior median area furrowed round the edges except at the apex; it is smooth, as are also the parts at its base; the rest of the segment closely strongly punctured except the posterior median area, which is strongly irregularly striated. Meso- and metapleuræ closely strongly punctured; the propleuræ smooth, striated at the apex. Abdomen closely punctured, the centre of postscutellum finely striated.

JOPPINI.

LISSOPHADNUS, gen. nov.

Scutellum rather flat, distinctly keeled laterally to the commencement of the apical slope. Areola represented by a small, smooth, flat, curved tubercle, widely distant from the base of the metanotum. Posterior median area with the apical half narrower than the basal; the apical lateral area commences at the end of the basal part, it is narrow, sharply pointed at the top, becoming gradually widened towards the apex; the basal lateral areæ are large, square, confluent, there being no petiolar area; the apical large, wide at the base, gradually narrowed towards the apex; the spiracular area distinct. Clypeus not separated, its apex transverse. Labrum projecting. Occiput deeply incised, margined. Areolet large, 5-angled; transverse median nervure received distinctly beyond the transverse basal. Petiole long, narrow, the postpetiole gradually widened. Mandibles unequally dentate.

Body uniformly rufo-testaceous; the wings hyaline. Discocubital nervure broken by a stump, as is also the recurrent nervure. The second and following segments of the abdomen closely punctured, the first smooth and shining.

The form of the metanotum and its areola is as in *Dimætha*, which genus may be known from the present by the scutellum not being flat and not keeled, by the areolet being narrowed in front, 4-angled, by the discocubital and recurrent nervures being unbroken, by the wings being clouded at the apex, and by the postpetiole being strongly punctured.

Lissophadnus testaceus, sp. n.

Testaceous, tending to rufous-ferruginous; the antennæ beyond the sixteenth joint black, the middle joints tinged with yellow. Wings clear hyaline, highly iridescent, slightly violaceous towards the apex. ♀.

Length 22 mm.

Runjit Valley, 1500 feet, Sikkim; April (*C. T. Bingham*).

Base of metanotum at the sides sparsely but strongly punctured; the lateral middle area rugosely punctured at the base, transversely reticulated-punctured at the apex; the posterior median area irregularly transversely striated; more or less reticulated at the apex; the lateral apical areas are coarsely reticulated; the segment is thickly covered with pale pubescence. Pleuræ closely punctured; the lower apical part of propleuræ striated. Clypeus somewhat strongly but not closely punctured in the middle; the sides and face smooth, almost bare. Labrum fringed with long golden hair. Front depressed; the inner orbits margined. Tips of mandibles black. Tarsi closely spinose.

Acanthojoppa flavo-orbitalis, sp. n.

Luteous; the sides of the face, clypeus broadly, the orbits broadly, and the pleuræ tinged with yellow; the middle of antennæ tinged with yellow; the eighteenth and following joints black. Wings hyaline, the basal half tinged with fulvous; the stigma and costa rufo-testaceous, the nervures black. ♀.

Length 14 mm.

Domdami Valley; October (*C. T. Bingham*).

Face strongly closely punctured, the upper part of the clypeus as strongly but not so closely punctured. Front and vertex smooth, the upper part of the front raised, surrounded at the sides and below by a smooth, bare, shining depression. Mesonotum closely finely punctured, depressed on either side laterally at the base; the scutellum more strongly punctured and thickly covered with long pale fuscous pubescence; the apical incision broad, rounded, not deep. Base of metanotum irregularly punctured; the areola round the sides and base reticulated, the apex in the middle closely, strongly, longitudinally striated; the second lateral area closely reticulated; the apical slope strongly transversely striated. Propleuræ on the upper half perpendicularly striated, below irregularly, more strongly reticulated-striated.

Mesopleuræ closely, strongly, irregularly punctured, more or less striated in the middle and at the apex below. Metapleuræ coarsely rugosely punctured, more or less coarsely striated below. Petiole smooth; the second segment is more strongly punctured than the others. The transverse cubital nervures meet in front; the recurrent nervure is received shortly beyond the middle.

The areola is large, longer than wide, rounded at the base, transverse at the apex, the sides bulging out where the transverse keel joins them; the pubescence on the apical slope long, dense, fuscous; the spines broad, rounded; its centre raised.

Comes near to *A. tinctipennis*, Cam.

Xanthojoppa latibalteata, sp. n.

Pale yellow; a line covering the ocelli and extended down to near the antennæ, three broad lines on the mesonotum (a transverse one uniting them at the apex), the scutellar depression, a line round the base of the metanotum, the greater part of the areola, the posterior median area, a broad band across the pronotum, a line on the top of the mesopleuræ, one down the base of the metapleuræ, one behind the hind coxæ, a mark (longer than wide) commencing near the middle and extending on to the postpetiole, a band on the second segment extending from the base to shortly beyond the middle, one on the basal half of the third with the apex transverse, and semi-circular ones on the basal half of the fourth, fifth, and sixth, the underside of the hind coxæ except at the base, the mark continued above obliquely to the upper inner edge, the hind femora except below, the apical two thirds of the hind tibiæ, and the hind tarsi, black. Wings hyaline, iridescent, the stigma testaceous, the nervures black. ♂.

Length 12 mm.

Domdami Valley, Middle Tenasserim; October (*C. T. Bingham*).

Areola reticulated; the upper third of the posterior median area longitudinally, the rest transversely, reticulated, the rest of the segment closely rugosely punctured, the apical slope thickly covered with fuscous pubescence. Pro- and mesothorax distinctly punctured, closely on the mesonotum; the scutellum more strongly punctured and thickly covered with longish fuscous pubescence. Scape and pedicel of antennæ rufo-testaceous, the rest black, the basal joints testaceous below. Petiole smooth; the second and third segments are closely distinctly punctured; the gastrocœli small, transverse,

smooth, testaceous; behind them are two long keels, with a shorter keel on the outer and inner side. Areolet 4-angled, distinctly narrowed in front; the recurrent nervure is received shortly beyond the middle; the discocubital nervure unbroken, the transverse median received beyond the transverse basal.

Allied to *X. 3-lineata*, Cam., which may be known by the absence of black on the hind legs, by the black line on occiput, and by the narrower abdominal black bands.

Amblyjoppa Binghami, sp. n.

Black; the basal three segments of abdomen red; the face (except for an anchor-shaped black mark down its centre), the clypeus (except for a small conical mark on its apex in the middle), the upper inner orbits (the line not reaching to the ocelli), a line on the lower two thirds of the outer (the line becoming gradually wider below, extending obliquely to the outer side of the mandibles), a broad line on the pronotum, tegulæ, tubercles, a squarish mark on the lower side of the mesopleuræ extending on to the sternum, two lines in the centre of mesonotum, scutellar keels, scutellum from shortly behind the middle, postscutellum, a mark almost filling the apical lateral area of metanotum, and the broad apical part of the sides of postpetiole, yellow. Legs yellow, densely covered with white pubescence; the hind femora red; the outer apical half of the fore femora, the middle femora (except the apical half below), the hind coxæ (except for a large mark above), the base and apex of hind femora narrowly, the apex of the hind tibiæ more broadly, and the hind tarsi, black. Wings hyaline to the base of stigma, smoky violaceous beyond, the nervures and stigma black. Antennal scape yellow below, the flagellum with a narrow yellowish band. ♀.

Length 20 mm.

Sikkim, Runjit Valley, 1000 feet; April (*C. T. Bingham*).

Head and thorax closely strongly punctured and thickly covered with white pubescence. The areola small, roundly narrowed to a point behind; the point dilated, the bordering keels smooth, shining, the apical narrower, less distinct, broadly rounded inwardly; the inner sides furrowed, the centre shining, irregularly wrinkled. The basal areae aciculated at the base, the rest irregularly punctured; the other areae strongly punctured, the posterior median stoutly transversely striated. Scutellum slightly roundly raised, the sides keeled to the middle. Pleuræ closely punctured, the lower half of propleuræ irregularly striated. Petiole keeled laterally,

and with a less distinct keel down the middle; the post-petiole closely strongly striated in the middle, the sides almost smooth; the second to sixth segments closely punctured, the puncturation becoming gradually weaker; the second and third striated down the middle. Gastrocœli deep, smooth.

This species is not unlike *A. rufocincta*, Cam., in coloration; it differs in the scutellum being longer compared with the width, more raised at the base, and with the lateral keels longer and more distinct, and the areola is smaller and more narrowed—more sharp-pointed—at the base.

Amblyjoppa iridipennis, sp. n.

Dark rufo-testaceous; the apical two thirds of the mesopleuræ above, the apical half below, the metapleuræ, metanotum, the basal segment of abdomen, and the second to shortly beyond the middle, the mesosternum (except for a triangular space on either side at the base), the hind coxæ, and the base of the trochanters above, black. The basal sixteen joints of antennæ yellow, tinged with red, the rest black. Wings uniformly fuscous violaceous, the nervures and stigma black. ♀.

Length 18 mm.

Sikkim.

Head and thorax somewhat strongly closely punctured; the eye-orbits are tinged with yellow, the yellow tinge broader on the lower outer orbits. The apex of mesonotum lighter-coloured in the middle. Base of metanotum strongly punctured (except for a smooth space bordering the areola); the latter is gradually narrowed from the apex to the base, which is rounded, narrow; the apex is rounded inwardly, the keel narrow, irregular; the outer edge of the inner side is irregularly narrowly depressed; in the centre is an irregular depression, and there are two smaller ones at the apex; the apical slope is irregularly strongly reticulated, the posterior median area more strongly than the lateral. Abdomen closely punctured, strongly at the base, weaker towards the apex; the second segment depressed at the base, between the gastrocœli, closely striated; the latter has four stout clearly separated keels on the inner half and one near the outer side.

Amblyjoppa? maculicollis, sp. n.

Black; the face, clypeus, mandibles, and the orbits narrowly, yellow; the front and vertex yellow, suffused with

rufous; the occiput and temples rufous, the mesonotum and scutellum of a deeper rufous colour, the scutellum darker coloured; a yellowish-rufous line, dilated behind, on the pronotum; the anterior legs reddish testaceous; the middle tibiae in front testaceous, the middle femora fuscous in front. Wings fuscous violaceous, the nervures and stigma black; the areolet 4-angled, the nervures meeting in front. Areola moderately large, horseshoe-shaped; the apex rounded inwardly. ♂.

Length 15 mm.

Middle Tenasserim, Salween Valley; July (*C. T. Bingham*).

Basal half of areola smooth, bordered laterally by a deep furrow; the apical half coarsely rugosely punctured. Head closely punctured, the apex of clypeus with only a few scattered punctures. Front furrowed down the centre, the furrow narrowed towards the apex. Thorax closely distinctly punctured, the scutellum more strongly than the mesonotum and thickly covered with blackish-fuscous hair. The metanotum at the base strongly punctured, the punctures distinctly separated; on the rest the puncturation is closer, more rugose, and more or less running into reticulations, on the posterior median area transversely reticulated. The mesonotum is densely covered with short fulvous pubescence; on the median segment the pubescence is longer and black, on it also the black is suffused with brown. Abdomen strongly closely punctured, the puncturation becoming weaker towards the apex; gastrocœli strongly regularly striated, the space between them being also striated. The malar space is black; a black spot connects the ocelli to the eyes.

This species differs from the typical form in the transverse cubital nervures being united in front. This may not, however, be a constant difference.

Amblyjoppa ruficeps, sp. n.

Black; the head reddish, the face and clypeus more yellowish in tint; a squarish black mark joins the ocelli to the eyes; the fore legs testaceous, darker above; the antennal scape reddish testaceous, the flagellum brownish below at the base. Wings uniformly fuscous violaceous, the nervures and stigma black. ♂.

Length 14 mm.

Middle Tenasserim, Salween Valley; July (*C. T. Bingham*).

Areola longer than wide, transverse at the base, becoming

gradually obliquely widened to beyond the middle; the sides at the apex not quite straight; the apex not clearly margined, broadly rounded inwardly; the segment is closely rugosely punctured, more closely rugosely on the apical slope; there is a longish narrow triangular area bordering the apical half of the posterior median; it is coarsely transversely striated. The pro- and mesothorax are closely strongly punctured, the metapleuræ more strongly than the rest; below the middle is a stout curved keel. The scutellum is more strongly but not so closely punctured as the mesonotum and is thickly covered with black pubescence. Abdomen closely punctured, the postpetiole more coarsely than the rest, the apical segments more weakly. Gastrocæli deep, bearing stout curved striæ. Tegulæ testaceous. Tubercles dark rufous. The black on the upper part of the body is slightly tinged with brown, especially on the metanotum; the middle coxæ are fuscous. There is a short but distinct stump on the discocubital nervure.

Apart from the difference in coloration and in the form of the areola, this species differs from *A. maculiceps* in having a stout curved keel on the lower part of the metapleuræ.

Amblyjoppa maculiceps, sp. n.

Black; the face, clypeus, labrum, and base of mandibles yellow; the front, vertex, outer orbits, and occiput yellow, largely suffused with rufous; a line on the pronotum, dilated at the apex, red, tinged with yellow; the mesonotum (except at the sides and base) narrowly rufous; the fore legs (except the coxæ, trochanters, and base of femora) black; the middle tibiæ tinged with testaceous at the base and in front. Wings uniformly dark fuscous violaceous, the nervures and stigma black. Areola semicircular. Antennal scape yellow, the flagellum brownish below. ♂.

Length 17 mm.

Middle Tenasserim, Salween Valley; July (*C. T. Bingham*).

Face and clypeus strongly, closely, regularly punctured; the labrum as closely but not so strongly punctured; the vertex distinctly but not so closely or so strongly punctured as the face; a smooth space at the sides of the ocelli, which are joined to the eyes by a broad black spot; there is a deep clearly defined furrow in the centre of the front, bordered by a raised distinctly punctured part; it extends to the middle; the part below is very smooth and shining, bare; the sides are smooth except near the eyes, where they are punctured.

Pro- and mesothorax distinctly regularly punctured; the scutellum is more strongly punctured and is thickly covered with black pubescence. The metanotum is much more strongly and closely, almost rugosely punctured; the areola wider than long, broadly rounded at the base, semicircular; the apex irregular and slightly turned inwardly; inside it is irregularly rugosely punctured, depressed on either side at the base, and with a smooth transverse space at the base; the segment is thickly covered with black pubescence. The basal four segments of the abdomen are closely punctured, the puncturation becoming gradually weaker; the base of the petiole is smooth in the middle; the postpetiole closely rugosely punctured.

The antennæ are as long as the abdomen, serrate, distinctly tapering towards the apex.

Amblyjoppa ruficauda, sp. n.

Black; the head, prothorax, mesonotum, the fourth and following segments of the abdomen, the anterior legs, the apex of the middle femora broadly, of the hinder more narrowly, and the four posterior tibiæ and tarsi, rufo-testaceous; the nineteen to twenty basal joints of antennæ reddish yellow, the rest black. Wings uniformly dark fuscous violaceous, the nervures and stigma black. ♂ ♀.

Length 14-19 mm.

Salween Valley, Middle Tenasserim; July (C. T. Bingham).

Face and clypeus closely, somewhat strongly and uniformly punctured; the front and vertex are not so closely, regularly, nor so strongly punctured. Pro- and mesothorax closely distinctly punctured; the mesonotum densely covered with fulvous pubescence; the scutellum and metanotum (except at the base) densely covered with longer black pubescence. The metanotum is more strongly rugosely punctured; the posterior median area is more or less transversely striated, the striæ running into reticulations; the outer apical area coarsely reticulated, the apex of the spiracular area is more coarsely punctured and more or less striated-reticulated than the rest. The lower part of the propleuræ is irregularly, stoutly, obliquely striated. Abdomen closely punctured, strongly at the base, becoming weaker towards the apex; the apical segments are densely covered with fulvous pubescence. Gastrocæli deep, large, the base and inner side with curved striæ, the rest more strongly longitudinally striated. The areola is broader at the apex than it is long, the base

broadly rounded, half the width of the apex, which is slightly rounded inwardly; the bordering keel is shining, flat, smooth, broad at the base; the apex is broadly depressed, finely rugosely punctured, the rest irregularly punctured and aciculated.

XXII.—*On the Black-and-tan Pattern of Domestic Dogs* (*Canis familiaris*). By R. I. POCOCK, F.L.S., F.Z.S., Superintendent of the Zoological Society's Gardens.

IN 'The Variation of Animals and Plants under Domestication,' pp. 33-35 (ed. 1905), the black-and-tan pattern of domestic dogs is discussed at some length. Darwin was led to investigate the question somewhat fully in the hope that he might thereby discover a clue to the origin of our breeds amongst wild species; but failing to find the tan-coloured spots over the eyes either depicted in any drawings of wolves, jackals, and other species of *Canis*, or visible on any skins in the collection of the British Museum, he came to the conclusion that the coexistence of these spots with tan-coloured paws is probably a case of correlated variation.

Apart from suggesting that a now extinct species involved in the pedigree of domestic dogs may have possessed these spots, he offered no other explanation of the "highly remarkable" fact of the occurrence of these spots in "extremely different breeds, living in various parts of the world."

The phenomenon, however, appears to me to be susceptible of a quite simple explanation.

In a typical black-and-tan dog, whatever the breed, the tan is distributed as follows:—on the sides of the muzzle and lips, the lower half of the cheeks, and the throat; a spot over the inner corner of the eye, very frequently on the inside of the ear, and as a large patch on each side of the chest above the base of the fore legs; on the paws of the fore legs and on the hind legs below the hock; to a somewhat variable degree on the inner sides of the legs, but extending over the front of the hind leg up to the body; on the circumanal area and on the underside of the tail, at least in its proximal portion. The rest of the animal is black. If a dog thus coloured be compared with many of the common wild species of *Canidæ*, it will be seen that the tan occurs over areas which in the wild species are paler than the rest of the body, owing to the fading or absence of the black annuli which prevail in the